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STUDIES ON NEOTROPICAL POMPILIDAE (HYMENOPTERA)

III. ADDITIONAL NOTES ON *EPIPOMPILUS* KOHL

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Epipompilus is one of the more exciting genera of Pompilidae, not only because these are among the most brilliantly colored of spider wasps, but also because of the many unusual and apparently primitive structural features of the genus. A few years ago the group was known from about six specimens, all females. In 1961 (*Psyche*, 68: 25-37), I described the male and reviewed the American species, basing my review on 18 specimens representing nine species. I have now accumulated more than 100 specimens and feel in a position to make some important additions to knowledge of the genus. Three species are described as new, all from South America, and the males of three species are described for the first time (*nigribasis*, *aztecus*, and *pulcherrimus*). The last-named species is the only one known from the United States, and I am indebted to R. W. Dawson of Washington State University for sending me an excellent series collected at the Archbold Biological Station in Florida. For much new South American material I am indebted to Fritz Plaumann, of Nova Teutonia, Brazil, and to Charles C. Porter of Harvard University.

Thirteen American species of *Epipompilus* are now known. Seven of these are known from both sexes, five from females only, and one from males only. All species are included in the following key, but only those species are discussed in the text which are described as new or for which new information is available. I have placed the species in two groups on the basis of an apparent concordance of the shape of the male subgenital plate with the nature of the convergence of the eyes of the female. I am hopeful that this may assist in making future sex associations.

KEY TO SPECIES

Females

1. Eyes converging at the top, the upper interocular line distinctly less than the lower interocular line; front fairly wide, middle interocular line at least about 0.57 x width of head (*aztecus* group)2
 Eyes parallel or diverging above, the upper interocular line equal to or exceeding the lower; front barely wider than the two eyes taken together, middle interocular line at most about 0.55 x width of head (*delicatus* group)6
2. Wings wholly fuliginous; abdomen wholly rufous; middle and hind tibiae with numerous short spines above
 *pulcherrimus* (Evans)
 Wings hyaline, bifasciate; abdomen black with whitish spots; middle and hind tibiae not or exceedingly weakly spinose3
3. Abdomen with whitish spots only on tergites two and five, none on sternites*aztecus* (Cresson)
 Abdomen with whitish spots on tergites two through five or six, also on some of the sternites4
4. Greater part of thorax and propodeum rufous; apical tergite black*bifasciatus* (Ashmead)
 Greater part of thorax and propodeum black; apical tergite with whitish markings5
5. Pronotum entirely rufous; hind femora black; propodeum, in profile, nearly flat in front, obliquely declivous behind*inca* n. sp.
 Pronotum mostly black, with a whitish band along the posterior margin and with whitish and rufous markings anteriorly; hind femora ferruginous; propodeum, in profile, forming a smooth arc
 *jocosus* n. sp.
6. Body and legs wholly black except for a pair of small whitish spots on second tergite; pronotum short, subangulate behind
 *williamsi* (Banks)
 Body and legs variously marked with rufous and whitish; pronotum arcuate or very weakly subangulate behind7
7. Thorax wholly rufous (or with limited black markings on sides of pronotum or on venter) (Central and South American species)8
 Thorax with extensive black markings (South American species)10
8. Front angle of ocellar triangle less than a right angle, postocellar and ocello-ocular lines subequal; second abdominal tergite yellowish brown*insolitus* Evans
 Front angle of ocellar triangle greater than a right angle, postocellar line much exceeding ocello-ocular line; second tergite with a whitish band or spots9

- 9. Postnotum a very narrow band; face and clypeus testaceous, antennae wholly testaceous; length of fore wing under 4 mm *.nigribasis* (Banks)
Postnotum medially about half as long as metanotum; face and clypeus black, antennae infuscated on apical third; length of fore wing 5-6 mm*delicatus* Turner
- 10. Tergites one and two mostly black, the latter with white markings; pronotum with extensive pale markings; postocellar line only slightly exceeding ocello-ocular line*tucumanus* n. sp.
Basal 1.5-2.5 tergites rufous, second sometimes with white markings; pronotum wholly black; postocellar line much exceeding ocello-ocular line11
- 11. Propodeum black except for limited whitish markings; antennae black; radial vein angulate at second intercubital vein*haupti* (Arlé)
Propodeum ferruginous; antennae ferruginous except darker apically; radial vein arcuate*excelsus* (Bradley)

Males

- 1. Subgenital plate with a broad, truncate base from which arises a slender, parallel-sided spine-like process (as in Figs. 1, 3); known species either with the thorax extensively ferruginous or the femora and tibiae almost wholly ferruginous (*aztecus* group)2
Subgenital plate tapering gradually to a point from a relatively narrow base (as in Fig. 5); known species without ferruginous markings on the thorax and with the hind legs, at least, mostly fuscous (*delicatus* group)5
- 2. Length of fore wing 4.5 mm or less; transverse median vein of hind wing erect, nearly perpendicular to anal and median veins; body black except clypeus and pro- and mesonota contrastingly ferruginous*pulcherrimus* (Evans)
Length of fore wing 5.5 mm or more; transverse median vein of hind wing oblique; body color not as above3
- 3. Thorax black, with limited whitish markings on pronotum and propodeum; hind femora ferruginous; aedoeagus very long and slender (Fig. 2)*jocosus* n. sp.
Thorax in considerable part rufous; hind femora black; aedoeagus not as above4
- 4. Wings strongly twice-banded; middle legs mostly fuscous; basal third of antennae light ferruginous*aztecus* (Cresson)
Wings weakly once-banded; middle femora and beyond light reddish brown; antennae brownish basally*innubus* Evans
- 5. Eyes strongly hairy; length of fore wing not over 3 mm; aedoeagus exceedingly short (Fig. 6)*nigribasis* (Banks)
Eyes with very short, barely noticeable hairs; length of fore wing over 3 mm; aedoeagus longer than above6

6. Front coxae with at least the basal 0.4 black; mesopleura rather dull, the punctures coarse, separated for the most part by less than their own diameters; parameres slender, somewhat tapering (Brazil)*excelsus* (Bradley)
Front coxae with at most the basal 0.3 black; mesopleura shining, finely punctate; parameres broader and more coarsely setose7
7. Third submarginal cell barely wider than high; parameres blunt apically, volsellae moderately slender (Central America) *delicatus* Turner
Third submarginal cell much wider than high; parameres acute apically, volsellae unusually slender (Argentina)*tucumanus* n. sp.

AZTECUS SPECIES-GROUP

EPIPOMPILUS PULCHERRIMUS (Evans)

This species has been known from two females, one from southern Florida and the other from Andros Island in the Bahamas. R. W. Dawson collected one female and five males in a Malaise trap at the Archbold Biological Station, Lake Placid, Florida, in the winter of 1965-1966 (29 Oct.-Jan. 6). The female is small (fore wing 4.5 mm) and differs from the two females previously known in having the pronotum wholly black except the collar, the remainder of the thorax and propodeum wholly black.

Description of male. — Length 4.5-5.0 mm; fore wing 3.5-4.5 mm. Head black except clypeus and mandibles in large part testaceous; antennae black; palpi brown; thorax black except entire pronotum, mesoscutum, and scutellum bright ferruginous (these areas with some black blotching in one specimen); legs black except all spurs whitish, front femora and tibiae suffused with testaceous, hind tibiae with a basal white spot; wings clear hyaline, with dark veins and stigma. Body clothed with short, whitish hairs, these hairs rather long on posterior slope of propodeum.

Clypeus truncate, twice as wide as high. Head 1.15 X as wide as high; front broad for the genus, middle interocular line 0.62-0.65 X width of head; eyes rather weakly convergent below, lower interocular line 0.95 X upper interocular line; ocelli in a broad triangle, postocellar line about 1.5 X ocello-ocular line. Front strongly alutaceous, with shallow but rather large, setigerous punctures. Antennae compact, segments five and beyond slightly produced below, so that the flagellum is crenulate in profile; first four antennal segments in a ratio of about 16:6:11:10, segment three about 1.5 X as long as thick. Setae of eyes exceedingly small. Pronotum short, its posterior margin arcuate; mesonotum closely

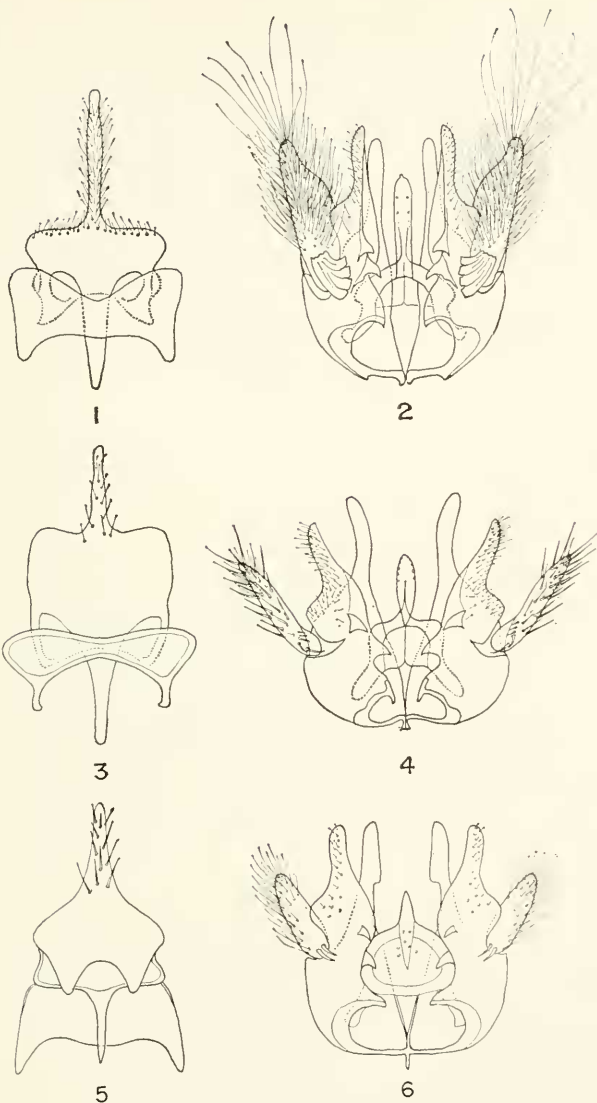


Fig. 1. Subgenital plate of male *Epipompilus jocosus* n. sp., paratype. Fig. 2. Genitalia of same specimen, ventral aspect. Fig. 3. Subgenital plate of male *E. pulcherrimus* (Evans). Fig. 4. Genitalia of same specimen, ventral aspect. Fig. 5. Subgenital plate of male *E. nigribasis* (Banks). Fig. 6. Genitalia of same specimen, ventral aspect.

punctate; postnotum nearly as long as metanotum, polished, depressed and slightly contracted medially. Propodeum shining, the setigerous punctures small; slope of profile low and even. Middle and hind tibiae with numerous short spines above; claws with a weak, erect tooth, except front tarsal claws more strongly toothed, the tooth subparallel to the outer ray, the outer claws of the front tarsus strongly curved. Fore wing with basal vein arising well beyond transverse median vein; radial vein arcuate, with only a faint angulation at the second intercubital vein; hind wing with transverse median vein erect, nearly perpendicular to anal and median veins, anal lobe large for the genus, half the length of the submedian cell. Abdomen rather small, depressed; subgenital plate in the form of a slender, setigerous process arising from a broad plate (Fig. 3); genitalia as shown in Figure 4.

EPIPOMPILUS AZTECUS (Cresson)

This species has been known only from southern Mexico. I have recently studied a male from Guatemala which represents the first known male of this species, as well as two females from Panama. The two females were collected on Barro Colorado Island, Canal Zone, one in April 1926 by C. T. Greene and one in May 1939 by J. Zetek [both U. S. National Museum]. They are relatively small for this species (fore wing 7.5-8.0 mm) and somewhat darkly colored: the middle femora are fuscous, and the propodeum and metapleura are wholly fuscous in one specimen, fuscous except at the anterior margin in the other. The male is from Santa Adelaida, Guatemala, collected at 1000 meters elevation in March and April, 1931, by J. Bequaert [coll. of Mus. Comp. Zool.]. All three of these specimens were borrowed many years ago by the late R. R. Dreisbach and have only recently become available for study. Dreisbach made a slide of the male terminalia, but it was poorly prepared, and in my opinion the subgenital plate on the slide (and perhaps the genitalia) do not properly belong with this specimen. I have therefore omitted mention of the terminalia in the short description that follows.

Description of male. — Length 7.0 mm; fore wing 5.7 mm. Head black, except lower inner orbits with a whitish streak, antennal sockets, face below sockets, and clypeus wholly light ferruginous; mouthparts largely light ferruginous, basal segments of maxillary palpi slightly infuscated; antennae ferruginous, apical two-thirds somewhat infuscated on upper surface; pronotum, mesoscutum, scutellum, upper half and posterior margin of mesopleura, and a small blotch on the metapleura, light ferruginous,

remainder of thorax and propodeum fuscous (posterior corners of propodeal rim white; disc of scutellum and lateral posterior margins of scutum slightly infuscated); front legs wholly light ferruginous, middle and hind legs fuscous except spurs white, tibiae with a white spot, and posterior coxae with a large white apical spot; abdomen fuscous, shining; fore wings strongly twice-banded much as in female. Body clothed with short, whitish hairs, these hairs rather coarse and conspicuous on the front and on the posterior part of the propodeum.

Clypeus large, measuring 1.85 X as wide as high. Head 1.12 X as wide as high, the vertex between the eyes forming a rather strong arc; front broad, middle interocular line 0.60 X width of head; inner orbits strongly convergent below, lower interocular 0.78 X middle interocular line, 0.93 X upper; ocelli in a broad triangle, postocellar line twice the ocello-ocular line. Front dull, with subcontiguous punctures on an alutaceous background. Antennae moderately long for the genus, weakly crenulate in profile; first four segments in a ratio of about 17:6:10:10, segment three 1.6 X as long as thick. Eyes not hairy. Pronotum short, with an abrupt anterior declivity, its posterior margin arcuate; mesonotum dull, closely punctate; postnotum considerably shorter than metanotum; propodeum with a strong median impression, in profile the slope very low. Hind tibiae with a few weak spines which barely extend above the pubescence; tarsal claws as described for *pulcherrimus*. Fore wing with the basal vein arising very slightly beyond the transverse median vein; radial vein slightly angulate at second transverse cubital vein; maximum width of third submarginal cell 1.6 X its maximum height; hind wing with transverse median vein oblique; length of anal lobe about 0.4 that of submedian cell.

EPIPOMPILUS BIFASCIATUS (Ashmead)

This species has been known only from the type female from Bahia, Brazil. I have recently studied a second specimen from a locality not far distant: Corema, Paraiba, Brazil, June 1957 (no collector given) [coll. Dept. Zool., Sec. Agricultura, São Paulo]. It is slightly smaller than the type (fore wing 7.4 mm), but there are no important differences in color or structure.

EPIPOMPILUS JOCOSUS new species

Holotype. — ♀, URUGUAY: Florida, Feb. 1952 (no collector stated) [MCZ, No. 31321].

Description of type female. — Length 9.5 mm; fore wing 7.5 mm. Head black, except mandibles, clypeus, and lower half of front light ferruginous, the ferruginous extending up the inner orbits to their point of greatest emargination; lower outer orbits, malar space, and labium also ferruginous, the palpi partially infuscated; pronotum black, except collar whitish and posterior margin with a whitish band (including the posterior lobes), the anterior margin, laterad of the collar, ferruginous; remainder of thorax and propodeum black, except for paired whitish spots just above the middle and hind coxae; abdomen black, with paired ivory-white spots on tergites two through six and sternites two through five, all of these spots partially or completely enclosing a black spot within them; antennae and front legs wholly ferruginous except somewhat dusky apically; middle and hind coxae black with whitish apices; middle and hind femora and middle tibiae ferruginous; hind tibiae fuscous, middle and hind tarsi dusky ferruginous; middle and hind tibiae with whitish spots near the base, tibial spurs whitish. Wings hyaline, the fore wing with two prominent brownish bands. Body uniformly clothed with pale pubescence.

Clypeus shallowly emarginate, measuring about 2.5 X as wide as high. Head 1.23 X as wide as high; eyes covered with short hairs; front moderately broad, middle interocular line 0.60 X width of head; eyes convergent above, lower interocular line 1.1 X upper; ocelli in a broad, flat triangle, postocellar line 2.2 X ocello-ocular line. First four antennal segments in a ratio of about 20:8:18:21, segment three 0.47 X upper interocular line. Front shining, closely punctate. Pronotum fairly long, broadly subangulate behind; mesoscutum closely punctate; postnotum wholly concealed dorsally; propodeum, in profile, smoothly convex. Front femora weakly incrassate; middle and hind tibiae with some very short spines intermingled with the pubescence; claws with the tooth long, erect. Fore wings with the radial vein quite strongly angled at the second intercubital vein, hind wing with the transverse median vein oblique, the submedian cell very sparsely and weakly setose, the anal lobe about 0.3 as long as the submedian cell.

Allotype. — ♂, BRAZIL: Nova Teutonia, Santa Catarina, 23 Feb. 1961 (F. Plaumann) [Mus. Comp. Zool.].

Description of allotype male. — Length 8.5 mm; fore wing 7.5 mm. Body black, with a bluish cast, marked with ivory-white as follows: apical three-fourths of mandibles, apical half of clypeus, spots on inner orbits opposite bases of antennae, pronotal

collar, band along posterior margin of pronotum, interrupted medially, sides of posterior rim of propodeum, apical margin of last abdominal tergite; antennae ferruginous, first two segments black above, flagellum moderately infuscated above, especially apically; coxae black, with apical white markings; trochanters black; femora ferruginous, tibiae also of this color except middle and hind tibiae infuscated at extreme base and toward apex and with a whitish spot on the outer side near the base; spurs whitish; tarsi fuscous. Wings lightly tinged with brownish, with a faint darker cloud in the marginal and second and third submarginal cells, also at the extreme wingtip. Body pubescence light brown to silvery, especially long and semierect on posterior slope of propodeum.

Clypeus weakly emarginate, 2.1 X as wide as long. Head 1.16 X as wide as high, the vertex arched very weakly above the eye tops; front narrow, middle interocular line 0.58 X width of head; inner orbits weakly convergent below, lower interocular line 0.95 X upper; ocelli in a broad triangle, post-ocellar line 1.7 X ocellio-ocular line. Eyes with only extremely short, inconspicuous setae. Front alutaceous and uniformly punctate. Antennae rather long, the flagellum crenulate in profile; first four segments in a ratio of about 17:7:14:13, segment three 1.8 X as long as thick. Pronotum of moderate length, broadly subangulate behind; mesoscutum closely punctate; postnotum shining, depressed medially, about two-thirds as long as metanotum; slope of propodeum low and even, the median line weakly impressed. Middle and hind tibiae with a large number of short spines above; tooth of claws strong, sloping outward somewhat, outer claws of front tarsus strongly curved, bifid. Features of wings as in female, except anal lobe of hind wing larger, about 0.4 as long as submedian cell. Subgenital plate and genitalia as shown in Figures 1 and 2; the very long setae at the apex of the parameres protrude from the apex of the abdomen even when the genitalia are in resting position.

Paratypes. — BRAZIL: 3 ♂♂, same data as allotype except dated 10-15 Feb. 1964, Jan. 1965 (F. Plaumann) [Mus. Comp. Zool., U. S. Nat. Mus.].

Variation. — The paratypes resemble the allotype closely in color except that one of them has the whitish band on the pronotum obsolescent. The fore wing varies from 6.5 to 7.7 mm in length; the middle interocular line varies from 0.56 to 0.59 X the head width, the lower interocular line from 0.85 to 0.95 X the upper interocular line.

EPIPOMPILUS INCA new species

Holotype. — ♀, PERU: Machu Picchu, 1900 meters, 4-19 Sept. 1964 (C. C. Porter) [MCZ, No. 31322].

Description of type female. — Length 13.5 mm; fore wing 11 mm. Head black except lower inner orbits with a whitish streak, apical third of clypeus testaceous, mandibles testaceous except darker apically, palpi fuscous; pronotum wholly ferruginous; remainder of thorax and propodeum black except for paired small whitish spots on lower posterior angles of mesopleura and on upper metapleura, and much larger spots at the posterior angles of the propodeum; abdomen black, with large, paired whitish spots on tergites two through six and on sternites two through four, with much smaller spots on the last two sternites; antennae ferruginous, somewhat dusky apically; front legs ferruginous, the tarsi dusky; middle and hind coxae black, with white apices; middle femora ferruginous, the middle tibiae ferruginous except for a black streak on the outer surface; hind femora and tibiae black, the middle and hind tarsi also nearly black; hind tibiae with white spots near the base; tibial spurs dusky ferruginous. Wings hyaline, fore wing with two prominent brownish bands. Entire body clothed with short, pale pubescence.

Clypeus shallowly emarginate, measuring about 2.5 X as wide as high. Head 1.2 X as wide as high; eyes densely short-haired; front moderately broad, middle interocular line 0.60 X width of head; eyes convergent above, lower interocular distance about 1.1 X upper; ocelli in a broad triangle, postocellar line 1.6 X ocello-ocular line. First four antennal segments in a ratio of about 29:10:23:27, segment three 0.51 X upper interocular distance. Front shining, very closely punctate. Pronotum rather long, its posterior margin subangulate; mesoscutum closely punctate; postnotum complete, only about a third as long as metanotum. Propodeum, in profile, sloping very weakly on the anterior two-thirds, then abruptly declivous behind; surface of propodeum covered with fine, closely parallel transverse striae. Front legs weakly incrassate; middle and hind tibiae not at all spinose; claws with the tooth strong, erect, the outer ray curved so as to be nearly parallel to it. Basal and transverse median veins of fore wing interstitial; radial vein strongly angulate at second intercubital vein; transverse median vein of hind wing strongly oblique, the submedian cell almost devoid of setulae; anal lobe small, about 0.3 as long as submedian cell.

Remarks. — This large species appears closely allied to *bifasciatus* and to *jocosus*, but there are prominent color differences as well as differences in the postnotum, shape of the propodeum, spines of the hind tibiae, and so forth. Although *innubus* belongs to this group and is known from the male only, from a locality only a few hundred miles from the type locality of *inca*, it seems much too small and differently colored to represent the male of this species.

DELICATUS SPECIES-GROUP

EPIPOMPILUS DELICATUS Turner

The male of this species was described by Evans, 1966, Mem. Amer. Ent. Soc., 20: 33. The genitalia are most similar to those of *pulcherrimus*, although the subgenital plate is very different and much like that of *excelsus* Bradley. As a result of other new sex associations in the genus, I feel more confident that this male is correctly associated with the female *delicatus* than I did when describing it.

I have seen one additional female of this species, collected at Turrialba, Costa Rica, by Kenneth Cooper [collection of U. S. National Museum]. This specimen is of the same size as the type and is very similar structurally, but there are some minor color differences: the greater part of the second tergite is rufous, upon which two whitish spots are imposed; tergite five also has large, paired whitish markings against a rufous background (these may be present but concealed in the type); the legs are mostly rufous but are irregularly tinged with brownish.

EPIPOMPILUS NIGRIBASIS (Banks)

This species was transferred to *Epipompilus* by Evans, 1966, Mem. Amer. Ent. Soc., 20: 31. It has been known only from the type female, from Panama, but I have recently discovered two males which unquestionably belong here. One is from Colombia: Bonda, August, Acc. no. 1999 [Acad. Nat. Sci. Philadelphia], the other from Rio de Janeiro, Brazil, 7 March 1966 (H. and M. Townes) [coll. H. K. Townes]. The small size and close coincidence of the wing venation with that of the female lead me to feel confident of this association. The eyes of the female are unusually strongly hairy, and these are the only known males having strongly hairy eyes. Although the two males are from widely separated localities, the genitalia and all other features are closely similar.

Description of male. — Length 2.5-3.5 mm; fore wing 2.2-3.0 mm. Head black; thorax and abdomen dark castaneous to fuscous, without white or rufous markings; antennae light brown, the flagellum darker on the upper surface; coxae and hind femora and tibiae dark brown, legs otherwise light to medium brown, the spurs brownish; wings subhyaline, the fore wings with a brownish cloud at the marginal and submarginal cells. Body extensively clothed with short, light brown setae; eyes densely covered with short setae.

Clypeus truncate, slightly wider than lower front. Head about 1.10 X as wide as high, the vertex forming an even arc above the eye tops; eyes strongly convergent below, lower interocular distance only 0.8 X upper interocular; middle interocular line 0.57-0.61 X width of head; ocelli in an obtuse triangle, post-ocellar line 1.2-1.6 X ocello-ocular line. Front alutaceous and with shallow punctures. Antennae rather long, the flagellum crenulate in profile; first four segments in a ratio of about 6:2:5:6, segment three 1.6 X as long as thick; flagellar pubescence coarse. Pronotum very short, arcuate behind; pro- and mesonota somewhat shining, with shallow, irregular punctures; postnotum very short, concealed medially by the overhanging metanotum; slope of propodeum low and even. Hind tibiae with some unusually long spines for the genus; claws with the tooth short, erect, except outer claws of front tarsus strongly curved, bifid. Basal vein of fore wing arising well beyond transverse median vein; marginal cell large, the radial vein angulate at second intercubital vein; hind wing with transverse median vein weakly oblique, almost perpendicular to median vein; anal lobe very small, hardly more than a minute scale with a fringe of setae (as it is in the female). Subgenital plate shaped much as in *excelsus*, but with fewer setae (Fig. 5). Genitalia with the aedoeagus exceedingly small; parapenial lobes abruptly expanded on apical half; parameres short, setose (Fig. 6).

EPIPOMPILUS TUCUMANUS new species

Holotype. — ♀, ARGENTINA: Horco Molle, Tucuman, 25 March-30 April, 1966 (C. C. Porter) [MCZ, No. 31320].

Description of type female. — Length 8.5 mm; fore wing 7.0 mm. Head black, except antennal lobes with ivory-white spots, apical half of mandibles testaceous; pronotum black, its posterior margin with a whitish band which does not include the posterior lobes but extends broadly across the shoulders to the anterior margin, the bands irregularly bordered with rufous; mesoscutum

black except ferruginous on the midline posteriorly; remainder of thorax and propodeum entirely ferruginous; abdomen black except basal third of first tergite as well as basal 1.3 sternites ferruginous, and with the following ivory-white: large, paired spots on tergite two, large, connected spots on tergite five, and a median spot toward the base of tergite six; antennae fuscous except each of the first three segments with an ivory-white spot above; front coxae black, with a whitish spot apically, middle and hind coxae ferruginous, with black and white markings apically, middle and hind femora ferruginous except black apically, legs otherwise fuscous (including spurs) except middle and hind tibiae with whitish markings on outer surface. Fore wings strongly twice-banded, faintly luteous between bands, but apices hyaline; hind wings hyaline, the tips clouded. Body wholly clothed with short, pale pubescence.

Clypeus arcuately emarginate, measuring 2.3 X as wide as its median length. Head 1.2 X as wide as high; eyes wholly covered with short hairs; front narrow, middle interocular line 0.56 X width of head; eyes convergent below, lower interocular line 0.9 X upper; front angle of ocellar triangle slightly exceeding a right angle, postocellar line 1.2 X ocello-ocular line. First four antennal segments in a ratio of about 19:7:18:24, the third segment 0.53 X upper interocular line. Front somewhat shining, the punctures rather shallow. Pronotum arcuate behind; mesoscutum minutely, shallowly punctate; postnotum a very narrow transverse band; slope of propodeum low and even, the median line not impressed. Front femora not incrassate; hind tibiae with numerous short, dark spines; claws with the tooth strong, erect. Fore wing with the basal and transverse median veins interstitial; radial vein not at all angled at second intercubital vein; hind wing with the transverse median vein oblique, the anal lobe very small, about 0.3 the length of the submedian cell.

Allotype. — ♂, ARGENTINA: Horco Molle, Tucuman, 15-21 May 1966 (L. Stange) [Coll. H. K. Townes].

Description of allotype male. — Length 5.0 mm; fore wing 4.7 mm. Head black, except marked with whitish around antennal insertions, on extreme lower inner orbits, and on basal half of clypeus; thorax and propodeum black, with some bluish reflections, except posterior margin of pronotum white (not reaching lateral lobes); abdomen black, with bluish reflections; antennae dark brown, blackish on upper surface; palpi light brown to testaceous; front coxae black on basal third, middle section light ferruginous, apex white, middle coxae black at base but mostly light

ferruginous, hind coxae black with white tips; all trochanters fuscous; front legs beyond trochanters light ferruginous, also middle femora; middle legs beyond femora lightly infuscated, also middle spurs; hind femora, tibiae, tarsi, and spurs black, except tibiae with a basal white spot; wings hyaline, fore wings weakly infuscated on outer third. Body pubescence pale, silvery.

Clypeus arcuate emarginate, measuring twice as wide as high. Head 1.1 X as wide as high, the vertex elevated in an even arc above the eye tops; inner orbits converging below, lower interocular line only 0.7 X upper; middle interocular line 0.60 X width of head; ocelli in an obtuse triangle, postocellar line only 1.1 X ocello-ocular line. Eyes not hairy. Front alutaceous, punctate. Antennae moderately elongate, weakly crenulate in profile; first four segments in a ratio of about 13:5:9:8, segment three nearly twice as long as thick. Pronotum short, its posterior margin broadly arcuate; mesoscutum strongly punctate; median portion of postnotum nearly as long as metanotum, smooth and polished; slope of propodeum very low. Claws dentate except outer claws of front tarsi strongly curved, bifid; hind tibiae with a number of spines extending above the coarse pubescence. Wing venation not differing appreciably from that of female. Subgenital plate essentially the same as in *excelsus* (Bradley) (see Evans, 1961, *Psyche*, p. 34, fig. 3). Genitalia differing from those of *excelsus* in only a few details: the volsellae are considerably more slender and elongate, and the parameres are slightly broader, tapering to a subacute point on the apical third, and slightly more strongly setose.

Paratypes. — 4 ♀♀, same data as type [Mus. Comp. Zool., U. S. Nat. Mus., and Inst. Miguel Lillo, Tucuman]. 1 ♀, Jujuy, Argentina, 15 Jan. 1966 (H. and M. Townes) [Coll. H. K. Townes].

Additional specimen (not designated a paratype). — 1 ♀, San Esteban, near Puerto Cabello, Venezuela, 14 Jan. 1940 (P. J. Anduze) [Coll. H. K. Townes].

Variation. — The paratypes vary in length from 7.0 to 8.5 mm, fore wing from 6.0 to 7.0 mm. The third antennal segment varies from 0.45 to 0.55 X the upper interocular line, the lower interocular line from 0.85 to 0.95 X the upper. There are no differences in color or structure worthy of note.

The Venezuela specimen is similar to the type series in many respects, and it seems to me very probable that it belongs with this species. In size and all standard measurements it falls within the ranges expressed above, and the wing venation is similar, although the wings have more of a yellow tinge toward the base.

There are several color differences: the mandibles are mostly testaceous; the antennae are medium brown except the first three segments yellowish below, white above; the pronotum has a very broad ivory-white band, though occupying the same position as in the types; the front femora are brownish, the middle and hind femora fuscous, the coxae rather extensively mottled with black; the first abdominal segment is wholly black, the spots on tergite two confluent medially.

EPIPOMPILUS EXCELSUS (Bradley)

This species is characteristic of southeastern Brazil, and appears to be relatively common for the genus. Fritz Plaumann, of Nova Teutonia, Santa Catarina, has now sent me 13 females and 33 males from that locality, collected August through April. I have also seen one female and 16 males from Rio de Janeiro, collected in March, 1966, by Henry and Marjorie Townes, as well as 10 males from Alto da Serra, Morretes, Parana, collected by the Townes in February 1966 [Coll. H. K. Townes]. I now feel convinced that the male I described in 1961 does in fact go with this species.

The series from Rio de Janeiro differs somewhat from specimens from Parana and Santa Catarina, but the male genitalia are identical and other structural differences minor. The female has a pair of white spots superimposed on the rufous base of tergite two, and the ocellar triangle is a little less broad, the postocellar line being only about 1.5 X the ocello-ocular line. The males from this locality are rather small (fore wing 3.3-4.4 mm) and also tend to have a less broad ocellar triangle; they also have somewhat more white on the legs, the front coxae having the apical 0.3-0.5 white. The genitalia of the specimens examined proved to resemble very closely the figure in my 1961 paper (p. 34, fig. 4).

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